# Montana Builder's Energy Code Checklist (2012 IECC)

*** Indicates Montana Energy Code value that was amended from the 2012 IECC.**

| | |
|---|---|
| Date | Builder |
| House Address | City |

☐ New Construction ☐ Addition to Existing Building ☐ Existing Building Renovation

| ☑ ☒ N/A | Component | Code Provision | Presc. Code Value | RESChk Tradeoff Value | 2012 IECC Code Section |
|---|---|---|---|---|---|
| | **Pre-Inspection/Plan Review** | | | | |
| ☐ ☐ ☐ | Construction Documents | Construction drawings sufficiently demonstrates energy code compliance | | | R103.2 |
| ☐ ☐ ☐ | HVAC Load Calculations | HVAC loads sized according to ACCA Manual J | | | R403.6 |
| | **Foundation** | | | | |
| ☐ ☐ ☐ | Slab | Unheated slab edge insulation R-value | R-10 | | R402.1.1 R402.2.9 |
| ☐ ☐ ☐ | | Heated slab edge insulation R-value | R-15 | | |
| ☐ ☐ ☐ | | Depth/length from top of slab | 4 ft | | |
| ☐ ☐ ☐ | Basement Wall Exterior Insulation | Continuous exterior insulation | R-15 | | R402.1.1 |
| ☐ ☐ ☐ | | Insulation depth (or to basement floor) | 10 ft | | R402.2.8 |
| ☐ ☐ ☐ | Crawl Space | Continuous, Exterior | R-15 | | |
| | **Framing/Rough-in** | | | | |
| ☐ ☐ ☐ | Windows & Doors | Area weighted average (maximum value) | U-0.32 | | R402.1.1 |
| ☐ ☐ ☐ | Skylight | U-factor (maximum value) | U-0.55 | | R402.1.1 |
| ☐ ☐ ☐ | Mass Wall | More than 50% of insulation on interior | R-20 | | R402.1.1 |
| ☐ ☐ ☐ | | Less than 50% of insulation on interior | R-15 | | R402.1.1 |
| ☐ ☐ ☐ | Duct Insulation | Supply ducts in unconditioned attic | R-8 | | R403.2.1 |
| ☐ ☐ ☐ | | All other ducts outside thermal envelope | R-6 | | |
| ☐ ☐ ☐ | Ducts | Sealed with approved tapes, mastics, and gaskets | | | R403.2.2 |
| ☐ ☐ ☐ | | Building cavities not used for supply ducts | | | R403.2.3 |

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| | **Insulation** | | | | |
| ☐ ☐ ☐ | Crawl Space | Cavity Insulation | R-19 | | R402.1.1 R402.2.10 |
| ☐ ☐ ☐ | | Continuous, Interior | R-15 | | |
| ☐ ☐ ☐ | | Continuous Class 1 vapor retarder, joints overlapped 6" and sealed, extending 6" up the stem wall | | | |
| ☐ ☐ ☐ | Basement Wall Interior Insulation | Continuous Insulation | R-15 | | R402.1.1 |
| ☐ ☐ ☐ | | Framed wall | R-19 | | R402.1.1 |
| ☐ ☐ ☐ | Floor Insulation | Must be in contact with floor sheathing | R-30 | | R402.1.1 |
| ☐ ☐ ☐ | Exterior Walls | Framed wall | R-21* | | R402.1.1 |
| ☐ ☐ ☐ | | Framed wall + continuous | R-13+R-5* | | R402.1.1 |
| ☐ ☐ ☐ | Air Sealing | Tested by blower door (ACH50) | ≤4* | | R402.4.2.1 |
| ☐ ☐ ☐ | | Air Barrier and Insulation Installation | | | R402.4.1.1 |
| ☐ ☐ ☐ | Ceiling Insulation | Insulation R-value | R-49 | | R402.1.1 |
| ☐ ☐ ☐ | | If full thickness over wall top plates | R-38 | | R402.1.1 |
| ☐ ☐ ☐ | Attic Access Hatch | Hatch door insulation | R-49 | | R402.2.3 |
| ☐ ☐ ☐ | Duct Tightness Test (Not required if all ducts and air handler are within conditioned space) | **Postconstruction** total leakage or leakage to outside (CFM per 100 $ft^2$)* | ≤4 CFM | | R403.2.2 |
| ☐ ☐ ☐ | | R**ough-in** total duct leakage test (CFM per 100 $ft^2$) | ≤4 CFM | | R403.2.2 |
| ☐ ☐ ☐ | Lighting | % of lamps that must be high-efficacy | 75% | | R404.1 |
| ☐ ☐ ☐ | Wood Fireplace | Gasketed doors, outdoor combustion air | | | R402.4.2 |
| ☐ ☐ ☐ | Forced Air Furnace | Programmable thermostat installed | | | R403.1.1 |
| ☐ ☐ ☐ | Heat Pump | Heat pump thermostat installed | | | R403.1.2 |
| ☐ ☐ ☐ | Certificate Posted | Permanent energy label posted on electrical panel | | | R401.3 |
| | **Sunroom with thermal isolation** | | | | |
| ☐ ☐ ☐ | | Glazing U-factor | U-0.45 | | R402.3.5 |
| ☐ ☐ ☐ | | Skylight U-factor | U-0.70 | | |
| ☐ ☐ ☐ | | Wall insulation | R-13 | | R402.2.12 |

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| | **Other Provisions** | | | | |
| ☐ ☐ ☐ | All Components | All materials, systems and equipment Installed per manufacturer's instructions and building code | | | R303.2 |
| ☐ ☐ ☐ | Basement Wall Exterior Insulation | Exposed insulation protected | | | R303.2.1 |
| ☐ ☐ ☐ | Snowmelt | Snow-melt controls | | | R403.8 |
| ☐ ☐ ☐ | U-factor Labeling | Windows, doors, and skylights certified and labeled | | | R303.1.3 |
| ☐ ☐ ☐ | Insulation Labeling | Installed insulation labeled and observable for inspection | | | R303.1 |
| ☐ ☐ ☐ | | Ceiling insulation | R-24 | | R402.2.12 |
| ☐ ☐ ☐ | Recessed Light Fixtures | IC-rated fixtures that meet infiltration criteria | | | R402.4.4 |
| ☐ ☐ ☐ | Hot Water | HW piping insulation under specific conditions | R-3 | | R403.4 |
| ☐ ☐ ☐ | | Circulating HW systems have automatic or accessible manual controls | | | R403.4.1 |
| ☐ ☐ ☐ | Mech Sys Piping Insul | Carrying fluids ≥ 105 degrees F or ≤ 55 degrees F | R-3 | | R403.5 |
| ☐ ☐ ☐ | Exhaust Openings | Dampers on all outdoor intake & exhaust openings | | | R403.5 |
| ☐ ☐ ☐ | Fenestration Air Leakage | Infiltration rate maximum for windows, skylights, and sliding doors | 0.3 CFM/ft$^2$ | | R402.4.3 |
| ☐ ☐ ☐ | | Infiltration rate maximum for swinging doors | 0.5 CFM/ft$^2$ | | |
| ☐ ☐ ☐ | | Windows, doors, and skylights air leakage listed and labeled | | | |
| ☐ ☐ ☐ | Pools and In-ground Spas | Heater accessible manual controls + time switch + cover | | | R403.9 |

| **Duct Tightness Test Results** | | |
|---|---|---|
| Test Date: | House Floor Area Ft$^2$: | Leakage CFM25: |
| Rough-in Test: Total duct leakage in CFM per 100 ft$^2$ of conditioned floor area: | | |
| Postconstruction Test: **Leakage to outdoors** in CFM per 100 ft$^2$ of conditioned floor area: | | |
| Postconstruction Test: **Total duct leakage** in CFM per 100 ft$^2$ of conditioned floor area: | | |

| **Blower Door Test Results** | | |
|---|---|---|
| Test Date: | Houser Volume Ft$^3$: | House Floor Area Ft$^2$: |
| Measured airflow at 50 Pascals (CFM50): | | |
| Air Change at 50 Pascals (ACH50 = (CFM50 x 60)/Volume): | | |

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| | **Air Barrier and Insulation Installation** | |
| ☑ ☒ N/A | **Component** | **Criteria** |
| ☐ ☐ ☐ | **Air barrier and thermal barrier** | A continuous air barrier installed in the building envelope.<br>Exterior thermal envelope contains a continuous air barrier.<br>Breaks or joints in the air barrier sealed.<br>Air-permeable insulation not be used as a sealing material. |
| ☐ ☐ ☐ | **Ceiling/attic** | The air barrier in any dropped ceiling/soffit aligned with the insulation and any gaps in the air barrier sealed.<br>Access openings, drop-down stair, or knee wall doors to unconditioned attic spaces sealed. |
| ☐ ☐ ☐ | **Walls** | Corners and headers insulated and the junction of the foundation and sill plate sealed.<br>The junction of the top plate and top of exterior walls sealed.<br>Exterior thermal envelope insulation for framed walls installed in substantial contact and continuous alignment with the air barrier.<br>Knee walls sealed. |
| ☐ ☐ ☐ | **Windows, skylights, and doors** | The space between window/door jambs and framing and skylights and framing sealed. |
| ☐ ☐ ☐ | **Rim joists** | Rim joists insulated and include the air barrier. |
| ☐ ☐ ☐ | **Floors (above-garage and cantilevered floors)** | Insulation installed to maintain permanent contact with underside of subfloor decking. |
| ☐ ☐ ☐ | **Crawl space walls** | Where provided in lieu of floor insulation, insulation permanently attached to the crawlspace walls. Exposed earth in unvented crawl spaces covered with a Class I vapor retarder with overlapping joints taped. |
| ☐ ☐ ☐ | **Shafts, penetrations** | Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space sealed. |
| ☐ ☐ ☐ | **Narrow cavities** | Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space. |
| ☐ ☐ ☐ | **Garage separation** | Air sealing shall be provided between the garage and conditioned spaces. |
| ☐ ☐ ☐ | **Recessed lighting** | Recessed light fixtures installed in the building thermal envelope shall be air-tight, IC-rated, and sealed to the drywall. |
| ☐ ☐ ☐ | **Plumbing and wiring** | Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring. |
| ☐ ☐ ☐ | **Shower/tub on exterior wall** | Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs. |
| ☐ ☐ ☐ | **Electrical/phone box on exterior walls** | The air barrier installed behind electrical or communication boxes or air sealed boxes installed. |
| ☐ ☐ ☐ | **HVAC register boots** | HVAC register boots that penetrate building thermal envelope sealed to the subfloor or drywall. |
| ☐ ☐ ☐ | **Fireplace** | An air barrier installed on fireplace walls. Fireplaces have gasketed doors. |